SOC 275 Social Statistics

Fall 2021, Tu Th 10:00-11:15, Tarbutton Hall 105

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Office Hours: Tu Th 11:30-1:00 or by appointment

Description

This course introduces students to statistical methods used in social research. We will cover descriptive and inferential statistics for univariate, bivariate, and multivariate analyses. Specific topics include scales of measurement, graphical displays, central tendency and variability, sampling distributions, interval estimation, and hypothesis testing for both categorical and continuous variables. By the end of the semester you should be able to (1) identify appropriate procedures for analyzing different types of data, (2) critically evaluate statistical information from sources such as academic journals and the news media, (3) solve basic statistical problems by hand, and (4) use SPSS software to conduct your own quantitative research and interpret the results.

Text and Materials

Textbook. *Essentials of Social Statistics for a Diverse Society*, 3rd edition, 2018, by Anna Leon-Guerrero and Chava Frankfort-Nachmias (in paperback or digital format). In addition to this textbook, we will also have a handful of online readings.

Software. SPSS (Statistical Package for the Social Sciences) is widely used in the academic and business world. Instructions for downloading a free version of SPSS will be provided in class. I recommend that you bring a laptop computer (with SPSS installed) to our class meetings. You can also take advantage of free access to SPSS at Cox Hall's Computing Center and Woodruff Library's Learning Commons.

Canvas. Our Canvas site includes (a) lecture overheads that summarize and supplement the textbook, (b) a variety of data sets (in SPSS format) that you will be analyzing throughout the semester, and (c) miscellaneous messages from me to the class. You will want to check the Canvas site at least once per week for new postings.

Requirements

Your course grade will be based on take-home assignments, in-class quizzes, and a research paper. Details below.

Take-home Assignments. Almost every week, a take-home assignment will be handed out in class and you will have at least one week to complete it. These assignments are designed to facilitate your understanding of key concepts and your ability to produce and interpret statistical results. The assignments also serve as a practical manual on how to use SPSS to conduct statistical research. All the necessary step-by-step instructions for using SPSS will be provided on the assignments.

There will be approximately 10 take-home assignments during the semester, weighted equally, and collectively they count **50 percent** toward your course grade. They are all open book and open notes. We will often begin an assignment in class together and work through some of the beginning problems as a group, but you will then complete the remaining problems on your own, outside of class. This is meant to be independent work — if you have questions, please ask me (your instructor) and not your classmates.

In-class Quizzes. There will be approximately eight quizzes during the semester. Each one will be a short, closed-book quiz consisting of five multiple choice questions. These are review quizzes, i.e., they cover material from previous readings and lectures. They are designed to be completed in about five minutes. These weekly quizzes are weighted equally and contribute **25 percent** to your course grade.

Research Paper. This is a relatively short paper that gives you the opportunity to conduct your own analysis and write up the results. The instructions for the paper will be distributed in the last month of the semester, and you will have at least three weeks to complete it (due date TBA). The paper will be roughly 8-10 pages in length (including tables and figures). The paper contributes **25 percent** to your course grade.

In summary, your course grade will be based on the following:

Take-home Assignments	50 percent
In-class Quizzes	25 percent
Research Paper	25 percent
TOTAL	100 percent

Grading Scale

Letter grade ranges are shown below. Grades will not be rounded up at the end of the semester because much of the graded work in this course is open book/notes, and I will also give you generous amounts of help if you ask. In other words, grades are already "rounded up" by virtue of the open and interactive nature of the work.

A 93-100	B+ 87-89.99	C+ 77-79.99	D+ 67-69.99
A- 90-92.99	B 83-86.99	C 73-76.99	D 60-66.99
	B- 80-82.99	C- 70-72.99	F 0-59.99

Other Course Policies

Access and Disability Resources. If you have medical/health conditions that may affect your grade, visit the Department of Accessibility Services (DAS) to arrange accommodations and show me the Accommodation Letter as soon as possible. The DAS website is https://accessibility.emory.edu/.

Attendance Policy. Students are expected to attend class regularly and arrive on time. Roll is not formally taken and there is no separate attendance grade, but regular attendance is vitally important to your success in this course. For example, the in-class quizzes function as a periodic check on attendance, and if you miss a quiz, it cannot be made up for any credit (with exceptions for documented emergencies and university-related events). If you are absent, it is your responsibility to find out what you missed.

A Note on Classroom Environment. Refrain from chatting with friends during class, entering late, and leaving early. If you need to leave early, let us know beforehand. Mute or turn off cell phones. If you bring your laptop computer to class, use it for class-related work only, not to check email or anything else.

Honor Code Policy. All work is to be completed in line with the Honor Code of Emory University. By submitting work in this course, you are pledging that your work reflects academic honesty, i.e., you have not lied, cheated, plagiarized or done anything to gain unfair academic advantage for yourself or anyone else. It is up to you to familiarize yourself with the honor code, which you can find at the below link:

http://catalog.college.emory.edu/academic/policies-regulations/honor-code.html

Schedule of Topics and Reading Assignments

In learning statistics it is crucial that you keep up with the materials as they are presented. The lectures and computer work will be much more meaningful if you have done the reading beforehand.

The schedule below shows weekly topics and assigned chapters from our main text, ***Essentials of Social Statistics for a Diverse Society.*** Online reserve readings are also indicated. Lecture overheads are not mentioned below but it should be understood that the overheads are always part of the weekly required readings.

Note: I reserve the right to change the schedule and other features of the syllabus if needed. Fair warning will be given.

Week	Topics	Readings
8/23	First day of class on Th, 8/26	
8/30	Sampling and research design; Levels of measurement; Tabular and graphical displays	Ch. 1: The What and the Why of Statistics; Ch. 2: The Organization and Graphic Presentation of Data
9/6	Summarizing the shape, center, and spread of variables	Ch. 3: Measures of Central Tendency; Ch. 4: Measures of Variability
9/13	Probability, normal distributions, and the Empirical Rule	Ch. 5: The Normal Distribution
9/20	Generalizing from sample to population; Sampling distributions and the Central Limit Theorem	Ch. 6: Sampling and Sampling Distributions; Online reading: Monte Carlo Simulations, by Peter Dizikes

Week	Topics	Readings
9/27	Confidence interval estimation for a single mean or proportion	Ch. 7: Estimation
10/4	The basic elements of hypothesis testing; Testing hypotheses about a single mean or proportion	Ch. 8: Testing Hypotheses (read to p. 214)
10/11	Fall Break on 10/11-12 (no class Tu); From univariate to bivariate analysis; Testing for group differences in means and proportions	Read the remainder of Ch. 8 (from p. 214 onward); Online reading: The Gender Wage Gap, by Hanna Rosin
10/18	Catch-up and review; Interval Estimation v. hypothesis testing	Online reading: Confidence Interval or P-Value, by Jean-Baptist du Prel
10/25	Pattern, strength, and significance in crosstabulation; Statistical versus substantive significance	Ch. 9: Chi-Square Test and Measures of Association (read to p. 250)
11/1	Chi-square as an extension of the t-test of proportions; Nominal and ordinal measures of association; Proportional reduction in error	Read remainder of Ch. 9 (from p. 250 onward); Online reading: About the GSS, by NORC
11/8	ANOVA as an extension of the t-test of mean difference	Ch. 10: Analysis of Variance
11/15	Causal reasoning; Controlling for a third variable; Typology of multivariate relationships	Online reading: Multivariate Relationships, by Alan Agresti and Barbara Finlay
11/22	Intro to bivariate regression and correlation; Thanksgiving Recess 11/24-26 (No class held on Th)	Ch. 11: Regression and Correlation (read to p. 307)

Week	Topics	Readings
11/29	From bivariate to multivariate regression and correlation	Read remainder of Ch. 11 (from p. 307 onward); Online reading: What is Multiple Regression, by Paul Allison
12/6	Last meeting on Tu, 12/7; Wrap-up and review	